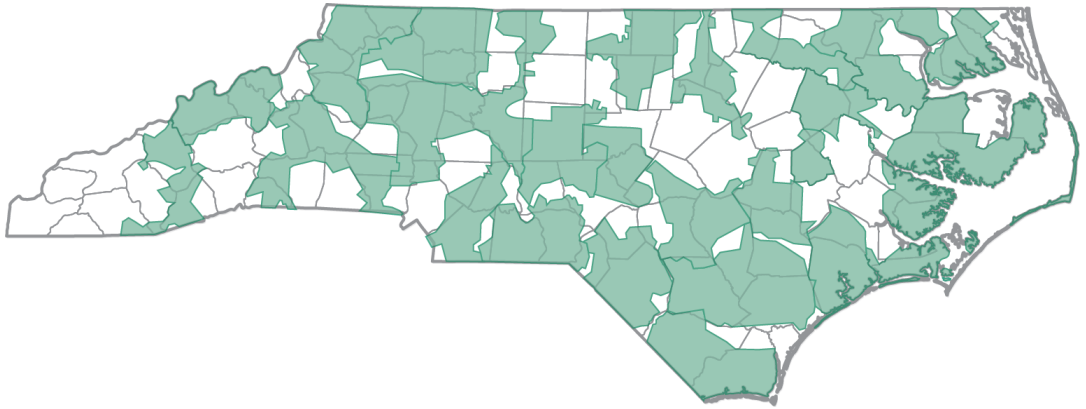
External Resource Clearing

PJM Market Implementation Committee

April 2, 2025

NC Electric Cooperatives

Your Touchstone Energy® Cooperatives



External Clearing Concerns – LSE Self-Supply

Problem/Opportunity Statement

External Capacity Resource Clearing

Problem / Opportunity Statement

- Pseudo-tied capacity resources (external capacity resources) generation deliverability into PJM Reliability Pricing Model (RPM) must be demonstrated prior to the start of the DY. To demonstrate generation deliverability into PJM, external capacity resources must obtain firm point to point transmission service on the PJM OASIS from the PJM border into the PJM transmission system or by obtaining network external designated transmission service.
- External resources are not assigned to a Locational Deliverability Area (LDA) or any of the sub-zonal LDAs. PJM's current RPM practice is to model and clear external resources only in the rest of RTO and not the reliability requirements of any specific LDA. This practice is currently not documented in PJM Manual 18.
- Under the current RPM business rules, however, external capacity resources are assigned to a LDA for Non-Performance Assessment purposes. This LDA assignment is made by PJM before the start of the Delivery Year (DY). This Non-Performance Assessment LDA assignment does not necessarily align with the transmission pathway and the rest of RTO clearing price award.
- There is an opportunity to review certain existing provisions pertaining to external capacity resources to determine if there are modifications that would better align the external capacity resource transmission pathway with external capacity resource LDA modeling, the applicable sink LDA used in RPM clearing, and resource performance obligations and mapping. Such mismatches are particularly harmful to Load Serving Entities self-supplying resources to serve load.
- The accompanying Issue Charge provides an initial list of relevant tariff/manual provisions including Manual 18, sections 4.2.4, 4.6.4; Tariff, Attachment DD, Section 5.14(a) (addressing the requirement of a resource needing to be located in an LDA to be paid the LDA clearing price) and PJM Manual 14B, attachment C (addressing LDA area, relevant transmission system and definition of connected load and generation).

External Capacity Resource Clearing

Issue Source

North Carolina Electric Membership Corp.(NCEMC).

Issue Content

In PJM's Reliability Pricing Model (RPM), for modeling and clearing, external, pseudo-tied capacity resources (external capacity resources) are not assigned to a Locational Deliverability Area (LDA) or any of the sub-zonal LDAs.

PJM's current RPM practice is to model and clear external capacity resources only in the rest of RTO and not the reliability requirements of any specific LDA. This practice is currently not documented in the current version of PJM Manual 18 (PJM Capacity Market), however, a previous version of Manual 18 (Rev. 39, December 21, 2017) noted this business rule.

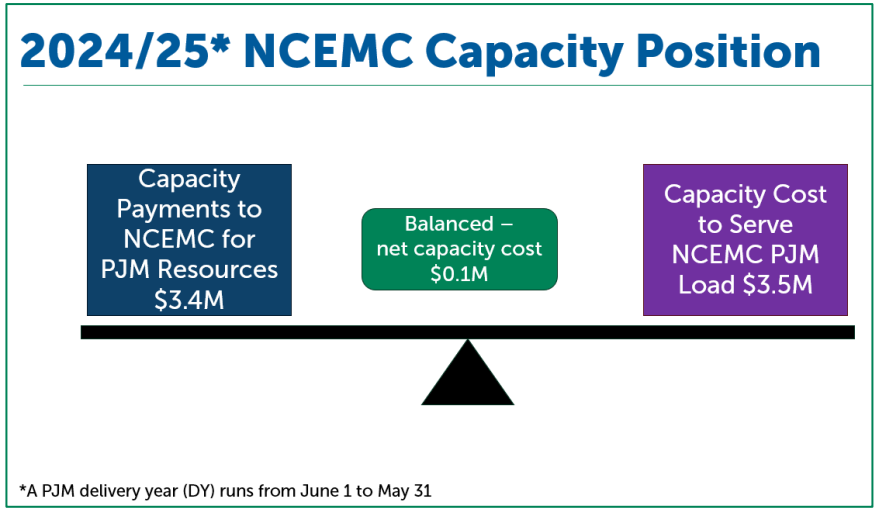
Under the current rules, however, external capacity resources, are assigned to a LDA for Non-Performance Assessment purposes (Manual 18, section 8.4A; Rev. 59, June 27, 2024). This assignment is made by PJM before the start of the Delivery Year (DY). Additionally, generation deliverability into PJM must be demonstrated prior to the start of the DY. To demonstrate generation deliverability into PJM, external capacity resources must obtain firm point to point transmission service on the PJM OASIS from the PJM border into the PJM transmission system or by obtaining network external designated transmission service (Manual 18, sections 4.2.4, 4.6.4; Rev. 59, June 27, 2024). The aforementioned Non-Performance Assessment LDA assignment does not necessarily align with the transmission pathway and the rest of RTO clearing price award. While not exhaustive, other relevant tariff/manual provisions may include Tariff, Attachment DD, Section 5.14(a) (addressing the requirement of a resource needing to be located in an LDA to be paid the LDA clearing price) and PJM Manual 14B, Attachment C (addressing LDA area, relevant transmission system and definition of connected load and generation). Other issues to potentially explore include the interaction of external resource clearing, changes to those rules on RPM planning parameters and separately how the capacity performance stop-loss limit, which is linked to the clearing price, may be misaligned with the LDA PAI assignment.

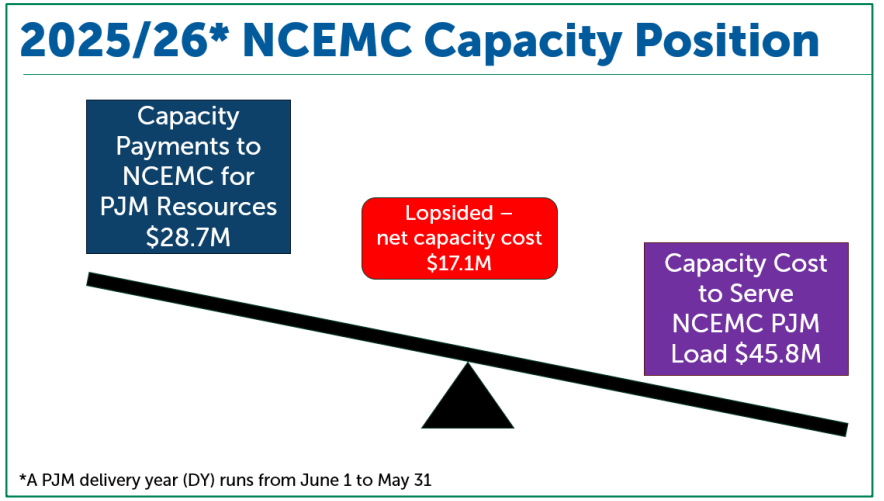
NCEMC believes there is an opportunity to review certain existing provisions pertaining to external capacity resources to determine if there are modifications that would better align the external capacity resource transmission pathway with external capacity resource LDA modeling, the applicable sink LDA used in RPM clearing, and resource performance obligations and mapping. These issues are explained in the accompanying Problem Statement.

Sources: PJM October 9, 2024 MIC

External Resource Self Supply Problem

- NCEMC has traditionally sold in at RTO clearing price and purchased to self-supply six NC cooperatives at DOM LDA clearing price
- Prior to 25/26 DY, DOM = RTO and so no “net cost” problem (see slide upper right as example)
- For 25/26 forward, DOM > RTO and so new $17M “net cost” problem has emerged (see slide lower right as example)





Initial Considerations - NCEMC

- Initial, relevant considerations for LSE External Resource Clearing:
  - Resource has existing pseudo-ties into PJM that are grandfathered from external capacity rules.
  - Is used by an LSE to supply its own load located in the LDA where the resource sinks.
  - Has a PJM-executed pseudo-tie agreement indicating the resource's transmission "sink" (see Appendix).
- This approach would eliminate the newly created buy and sell cost differences for load and pseudo-tied resources that are intended by an LSE to supply load in a LDA that separates from the rest of the RTO.

Appendix A

- Transmission Excerpts from NCEMC's Catawba and Hamlet Pseudo-Tie Agreements with PJM:

D. Transmission Service

Attaining BA

Owner of Service	NCEMC
Transmission Provider	PJM
Path (POR/POD)	CPLE-PJM
Source	SOUTHMP
Sink	DOM
MW	55 MW for Unit 2 and 55 MW for Unit 3
Start Date	06/01/2013
Stop Date	06/01/2018
Product Type	NETWK_EXT_DESIGNATED
NAESB Registry Complete	Yes
Notes	Network transmission service for Hamlet 2&3

Attaining BA

Owner of Service	NCEMC
Transmission Provider	PJM

Path (POR/POD)	DUK-PJM
Source	DUKIMP
Sink	DOM
MW	50
Start Date	10/01/2013 00:00
Stop Date	10/01/2018 00:00
Product Type	NETWK_EXT_DESIGNATED
NAESB Registry Complete	Yes
Notes	Network transmission service for Catawba

Owner of Service	NCEMC
Transmission Provider	PJM
Path (POR/POD)	DUK-PJM
Source	DUKIMP
Sink	DOM
MW	50
Start Date	10/01/2018 00:00
Stop Date	10/01/2024 00:00
Product Type	YEAR-NETWK_EXT_DESIGNATED with rollover rights
NAESB Registry Complete	Yes
Notes	Network transmission service for Catawba

Owner of Service	NCEMC
Transmission Provider	PJM
Path (POR/POD)	DUK-PJM
Source	DUKIMP
Sink	DOM
MW	50
Start Date	06/01/2017 00:00
Stop Date	06/01/2022 00:00
Product Type	YEAR-NETWK_EXT_DESIGNATED with rollover rights
NAESB Registry Complete	Yes
Notes	Network transmission service for Catawba